

[0130] Luminosity compression can be achieved with a computer filter that reduces both brightness and contrast thereby reducing the images RGB output levels. A reduction by >20% is required. A reduction by 50% of both brightness and contrast is generally optimal to address ghosting.

[0131] Luminosity Compression may also be achieved with a computer filter that reduces contrast via control of RGB levels output. On a scale of 0-255 for output values, a reduction of the highlights output from 255 to 210 is required. A reduction down to 160 is generally optimal to address ghosting. The Luminosity compression may either precede or follow the ACB Stereo Color Contrast Filter treatment. However the colour isolation of the ACB Stereo Color Contrast Filter may more accurately occur prior to compression. An example of Luminosity Compression follows.

[0132] ACB Luminosity Compression of the Left and Right Images

[0133] Brightness-50%, Contrast-50%.

[0134] Or alternatively via RGB levels Control of the left and right images. RGB highlight levels output 160.

[0135] Luminosity compression is a requirement for anaglyphs produced via the color balance method of color wash described below.

[0136] A computer programs software values for the preceding filter and Luminosity Compression may be pre-set to render all adjustments with a single sweep for each of the pair enabling easy and convenient anaglyph production. Alternatively, Luminosity Compression of the video pair may be achieved with a video path through analogue contrast and brightness video filters.

[0137] ACB Color Wash refer to FIG. 4.

[0138] As the left and right images of the stereo pair are intended to be exclusively offered to corresponding eyes for viewing through red/green-blue anaglyphic gels, the contrast and colour information of the stereo pair must be placed inside spectrally opposed anaglyphic color channels to enable mutual extinction of left and right views. FIG. 4.18 displays separated RGB color histograms representing the effect of the Color Wash filter treatment applied to the image to be viewed through red gel that has been prior treated by the luminosity compression filter. FIG. 4.19 displays separated RGB colour histograms representing the effect of the colour wash treatment applied to the

image to be viewed through green-blue gel that has been prior treated by the luminosity compression filter. Color washing is an embodiment of the present invention. The Color wash for the images to be viewed through red gel renders a saturation of predominantly red and also magenta and yellow, across the shadow, midrange and highlights of the image to be viewed through the red gel allocating all that image's contrasts within a predominantly red color channel.

[0139] The Color wash for the images to be viewed through green-blue gel renders a saturation of predominantly green and blue and also cyan, across the shadow, midrange and highlights of the image to be viewed through the green-blue gel allocating all that image's contrasts within a predominantly green-blue color channel. An example of Color Wash via color balance control for anaglyphic colour channel saturation follows.

[0140] RED WASH. (for the image to be viewed through red gel)

[0141] Shadow levels, Red +100, Green-100, Blue-100.

[0142] Mid tone levels, Red+100, Green-100, Blue-100.

[0143] Highlight levels, Red+100, Green-100, Blue-100.

[0144] GREEN/BLUE WASH. (For the image to be viewed through green-blue gel)

[0145] Shadow levels, Red-100, Green+100, Blue+100.

[0146] Mid tone levels, Red-100, Green+100, Blue+100.

[0147] Highlight levels, Red-100, Green+100, Blue+100.

[0148] The above Color Wash saturation of the digitized stereo pair should be caused to also affect transparencies or pixels without color values in the digital record to enable a total saturation. This results in two spectrally opposed anaglyphic color channels, one appearing red and the other green-blue.

[0149] Such complimentary saturations enable placement for the images of the stereo pair inside spectrally opposite anaglyphic color channels.

[0150] Though seeming to appear obliterated the contrast and color information remain retrievably intact. The image to be viewed through the red gel now

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Stereo Color Contrast filter values follow.

Alternative Example 1.

[0162] Colour Wash via Curves or Levels Output.

[0163] For the images to be viewed through red gel, both the green and blue output levels are set to the minimum.

[0164] Red 0-255, Green 0-0, Blue 0-0.

[0165] For the images to be viewed through green-blue gel, the red color output level is set at the minimum.

[0166] Red 0-0, Green 0-255, Blue 0-255.

[0167] This results in anaglyphic colour channel saturations appearing as with the prior described color wash via color balance, one appearing red and the other green-blue.

[0168] An example of ACB Stereo Color Contrast filter values for the above alternative colour wash example 1 via output levels and where luminosity compression via highlight levels output is 160, is as follows:

3 For the image viewed through red gel.

Red + cyan 100% + black 25%, Yellow + cyan 50%, Green -cyan 53%, Cyan - cyan 68%, Blue - cyan 35%, Magenta + cyan 55%, Black + or - black optional.

For the image viewed through green-blue gel.

Red - magenta 48%, Yellow no treatment, Green + magenta 35%, Cyan + magenta 65%, Blue + yellow 50%, Magenta + black 5%, Black + or - black optional.

Alternative Example 2.

[0169] Color Wash via Curves or Levels Output.

[0170] For the images to be viewed through red gel, both the green and blue color output levels are set to the maximum.

[0171] Red 0-255, Green 255-255, Blue 255-255.

Blue + yellow 50%, Magenta no treatment, Black + or - black optional.

[0183] A computer programs software values for the Color Wash filters described above may follow those of the preceding filters and be pre-set to render all adjustments with a single sweep for each of the pair enabling easy and convenient anaglyph production.

[0184] Alternatively, existing analogue video colour filters may supply the required saturations.

[0185] ACB Blending and Fusion refer to FIG. 5

[0186] The two images, left and right, now become one.

[0187] With either of the images of the stereo pair superimposed over the other they can now be blended so that they appear equally prominent. This can be achieved using a computer program to cause the opacity of the image on top to become 50% opaque so that 50% of the image below also shows. A blend can be achieved by using a computer program to merge such layers. Or the pixel values of the stereo pair may be averaged by computer program to result in a 50/50 blend of the two images. The separate predominantly red and predominantly green-blue images of the stereo pair are thus fused into a single composite resulting in an anaglyphic image in a contrast-compressed state. FIG. 5 represents a histogram showing the combined RGB color records of both the left and right colour washed images following their superimposition and blending into a single composite image.

[0188] A computer programs software values for the image blend may follow those of the preceding filters and be pre-set to render all adjustments with a single sweep.

[0189] Alternatively, a 50/50 blended output of the color washed pair may be achieved with an existing analogue video mixer or cross-fader.

[0190] ACB Contrast Expansion Refer to FIG. 6

[0191] An anaglyphic 3D image is now plainly apparent through red/green-blue anaglyphic gels though it is dim to view. The contrast and color information inside each color channel are still in their compressed state. They can now be expanded and regain details of contrast and color from within each anaglyphic color channel and depending on which method of color wash also utilize the hue

[0240] Should a frame rate modulation be selected at 9e, a frame rate modulation is effected where field recognition circuit 9e sends frame initiation signals 9f to stereo switch 9c causing a frame rate modulation from the first frame detected. A frame initiation signal 9r is also sent to index generator 9t. Index generator 9t issues index pulses to the outgoing signal of contrast expander 9u at a frequency one quarter that of the modulation rate, being one quarter the frame rate, and thus identifies the initiation of alternate frames displaying red/left oriented anaglyphic color channels.

[0241] The anaglyphic perception of red is weak and may be assisted by the ACB Stereo Color Contrast Filter not treating the red color records in the stereo pair. Or the filter's effect of adding cyan to the red color record of the images to be seen in the red phase and subtracting magenta from the red color record of images to be seen in the green-blue phase may be applied to a lesser extent or nth degree.

[0242] In such ways the anaglyphic perception of red to each eye in modulating anaglyph is enhanced.

[0243] In one preferred embodiment of this invention, the modulating motion anaglyph is processed by an ACB filter in which the ACB Modulating Stereo Color Contrast Filter is adjusting only the black color records (to assist the uptake of the color wash and for control of brightness.) This is followed by luminosity compression, color wash, blending and RGB levels contrast expansion. This presents an observer with field rate modulations of color contrasts that are perceived as balanced due to persistence of vision from the multiplexed display. This may be preferred, as the multiplexed anaglyphic color records appear more natural than when the full ACB Stereo Color Contrast Filter is used as it necessarily alters the color record. Or the effect of the full ACB Stereo Color Contrast Filter adjustment may take place to an nth degree.

[0244] Monochromatically perceived R/G-B to G-B/R modulations are produced where de-saturation of the color records of the stereo pair occurs instead of the selective color adjustments of the stereo colour contrast filter.

[0245] ITEM 4. FULL COLOR LEFT/RIGHT CONCURRENT VIEWING OF STROBE FREE STEREOSCOPIC RGRB CYCLE MODULATING ANAGLYPH. STILL OR MOTION.

[0246] A red, green, red, blue (RGRB) cycle of anaglyphic color channel orientations present a full color view to each eye via a multiplex of primary colors contained in modulating anaglyphic color channel displays while